

# Coakley Landfill Community Update

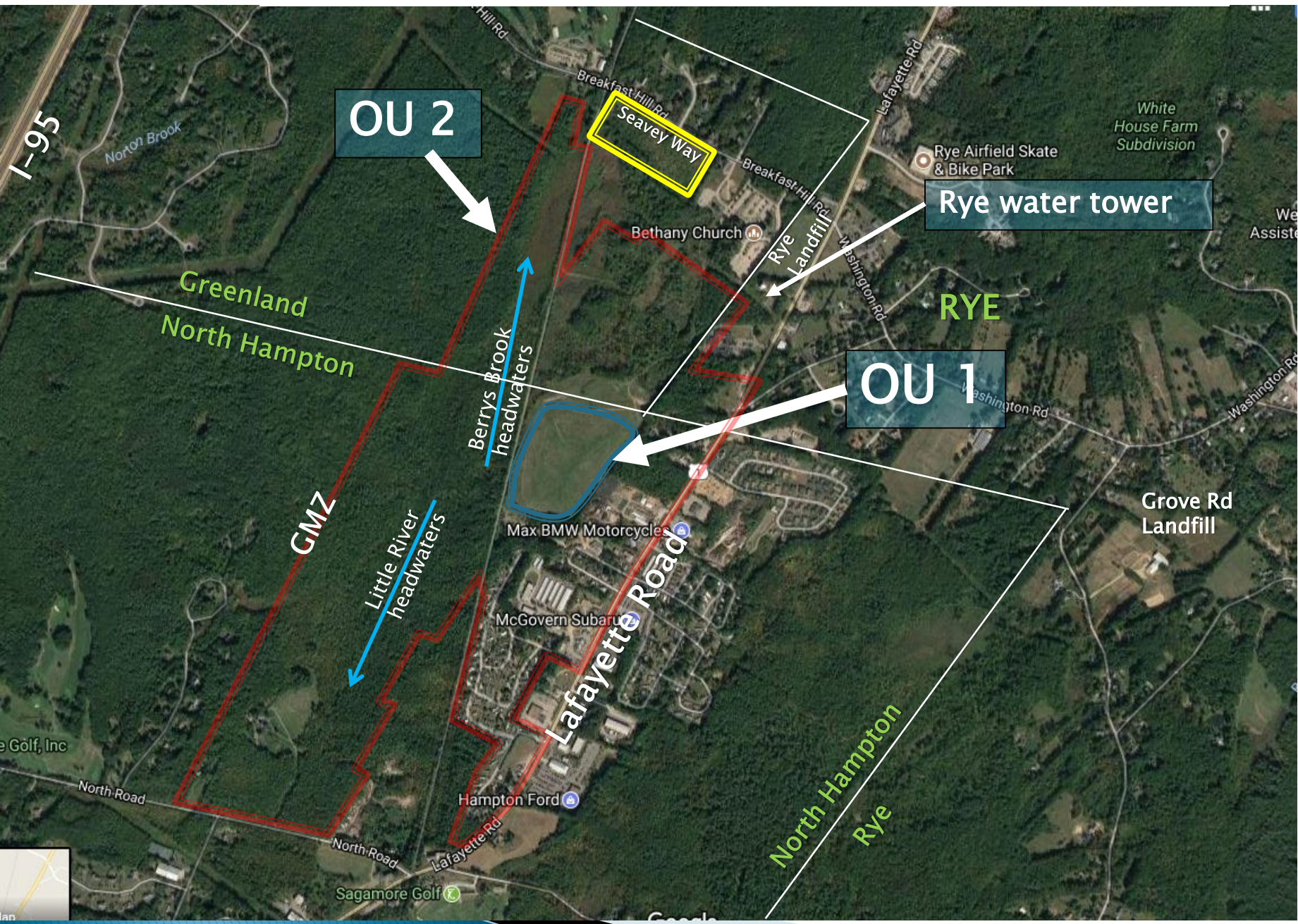


June 25, 2019

# Overview

- Background
  - History
  - Applicable Standards and Screening Levels
- Private Well Sampling
- Ongoing and Completed Investigations
  - Bedrock
  - Fish Tissue Sampling
  - Stormwater Sampling





# History

- 1972–1985 Waste Deposited
- 1990 Record of Decision for Remedial Action
- 1998 Landfill Consolidated and Capped
- 2015 1,4–Dioxane Added as Site COC = 3.0 ppb
- 2016 PFAS Sampling Initiated
- 2016 EPA HA and DES AGQS for PFOA and PFOS = 70 ppt
- As of 2017, Many Wells Meeting Most Site CLs

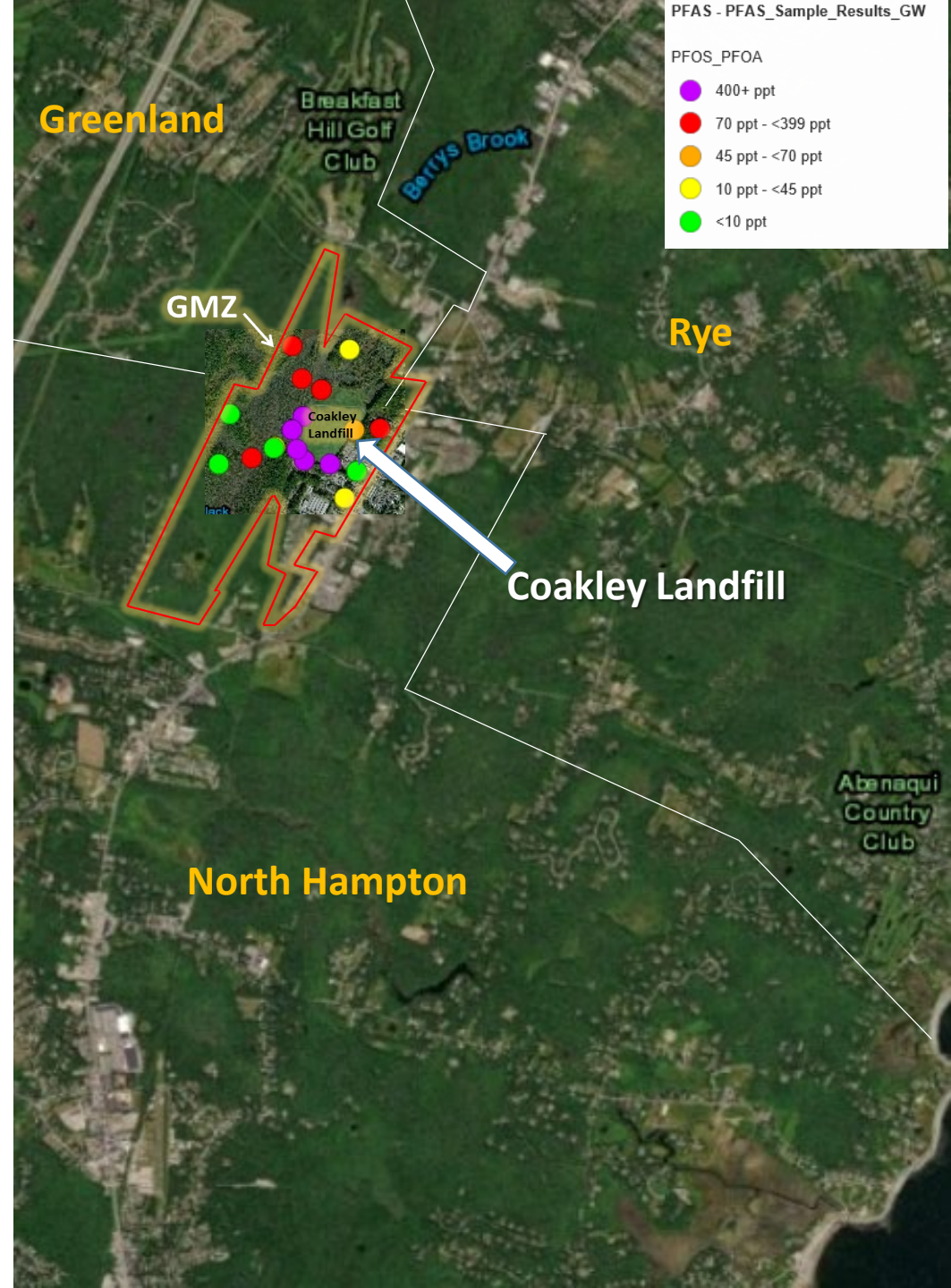


# Applicable Standards and Screening Levels at Coakley

- Drinking water health advisory (HA) and AGQS
  - PFOA and PFOS = 70 ppt in *drinking water*.
- Screening levels (SLs)
  - PFOA and PFOS = 760 ppt in *surface water*
  - PFBS = 760,000 ppt in *surface water*
  - PFOA and PFOS = 0.369 ppm in *sediment*
  - PFBS = 369 ppm in *sediment*
  - PFOA and PFOS = 5.21 ppb in *fish tissue*
  - PFBS = 5,210 ppb in *fish tissue*

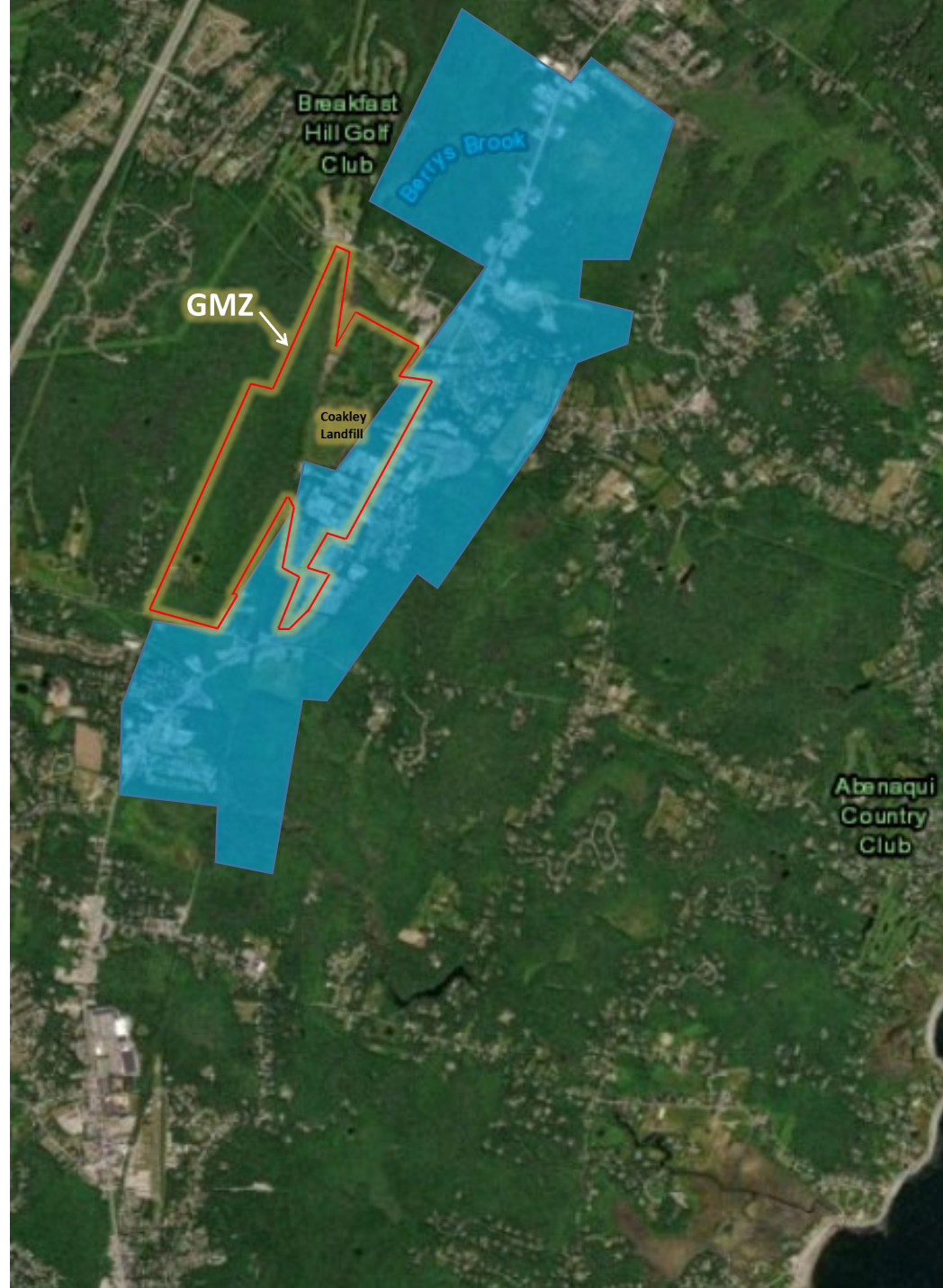
# Coakley Landfill

1. GMZ
2. PFAS in Site MWs 2016
3. Prompted area private well sampling



# Postcard Survey

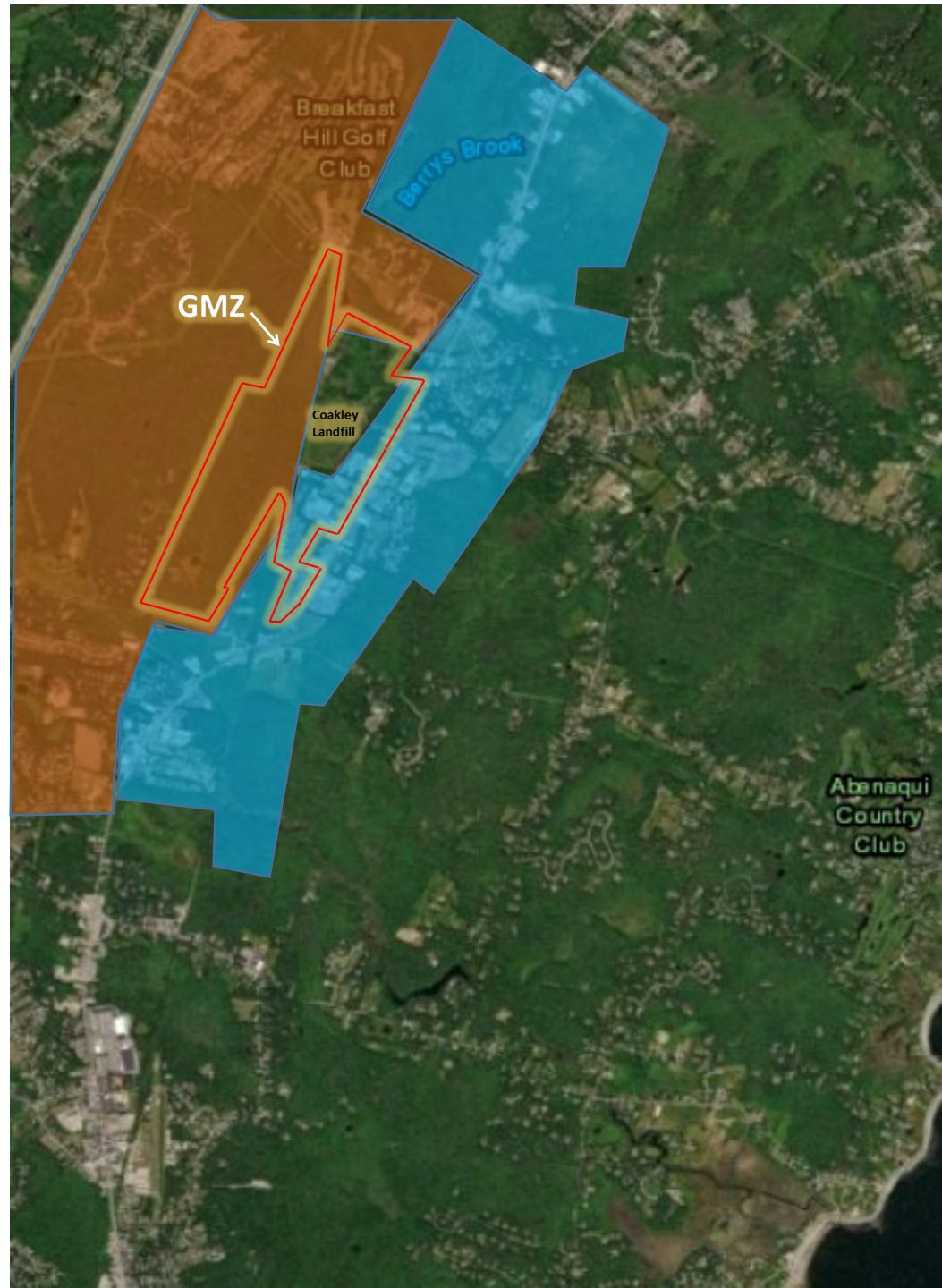
- Public water available
- Not all properties connected
- Objective: to identify & sample existing private wells





# Extended Sampling

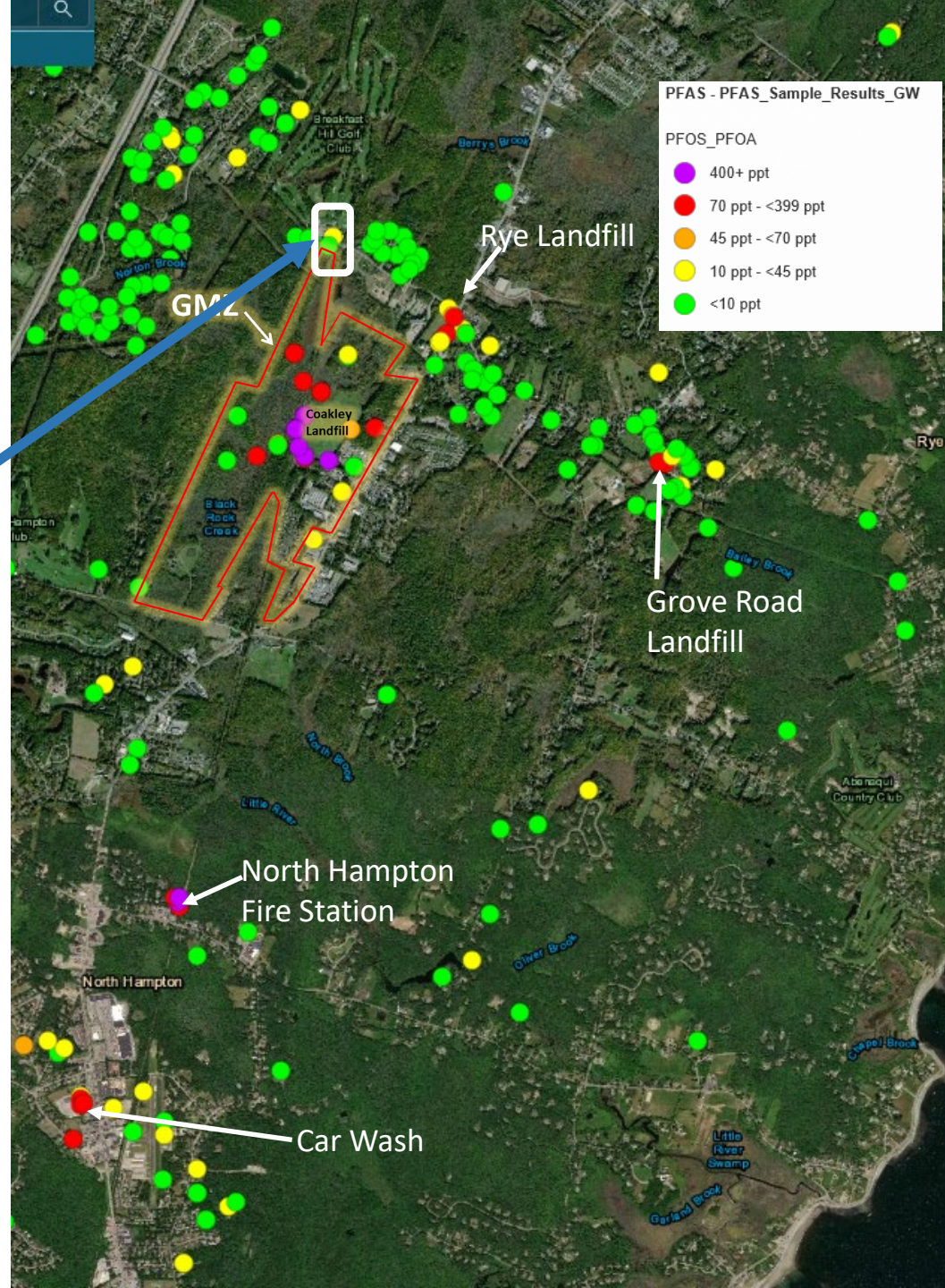
- Published offering for private well sampling (PFAS + 1,4-dioxane)
- Multiple mobilizations
- NHDES/EPA performed
  - Trained personnel
  - Contract labs
  - Sample ready





# Results (PFOA+PFOS)

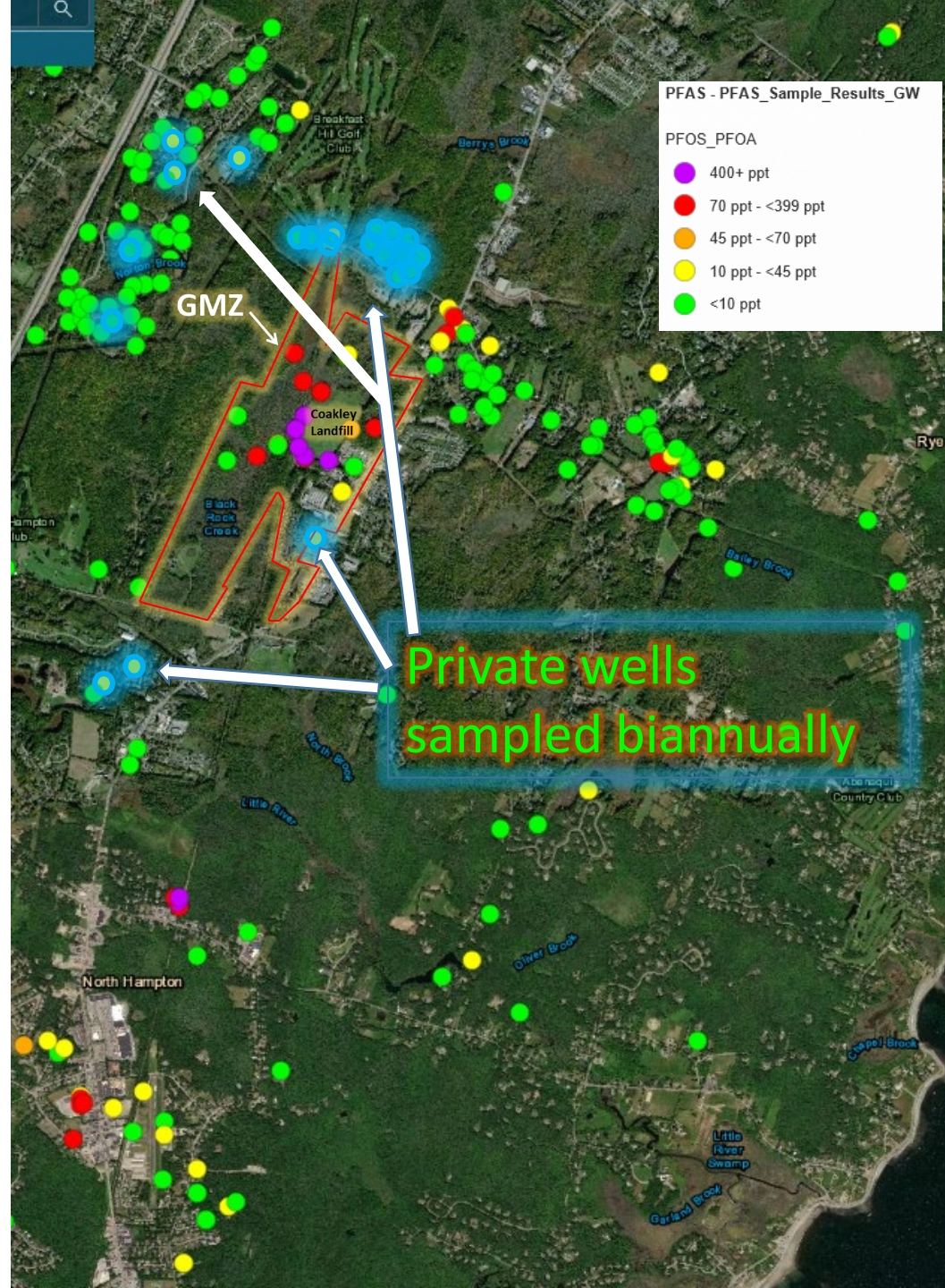
- Summary
- Consistent with existing conceptual site model
  - Groundwater flow
  - Other contaminants
- 1,4-Dioxane detections
  - Detected in two wells
  - Lowering of standard
  - Treatment systems inst.





# Biannual Sampling

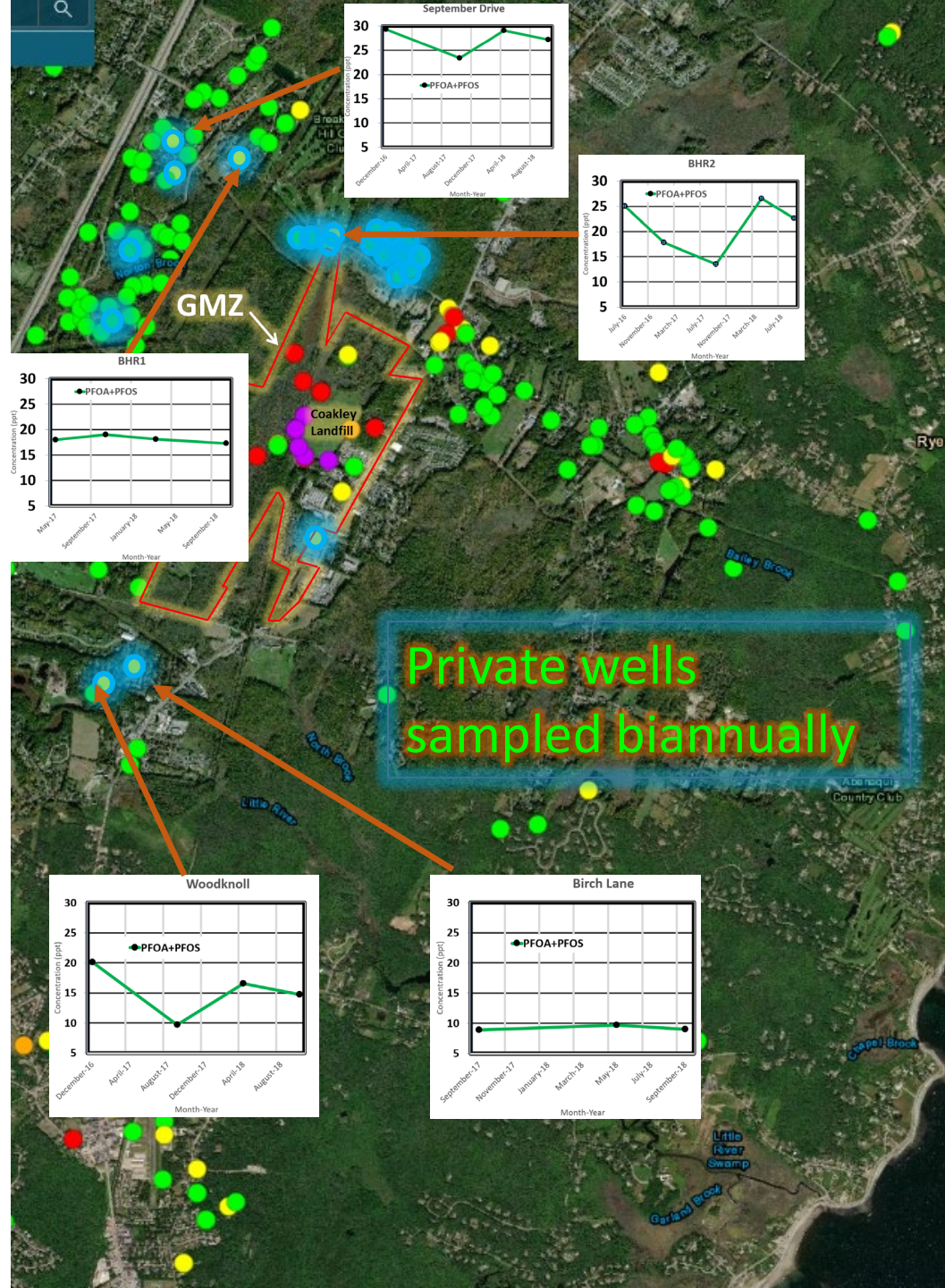
- Site monitoring
- Private well monitoring
- Data trends





# PFOA + PFOS Trend Summary

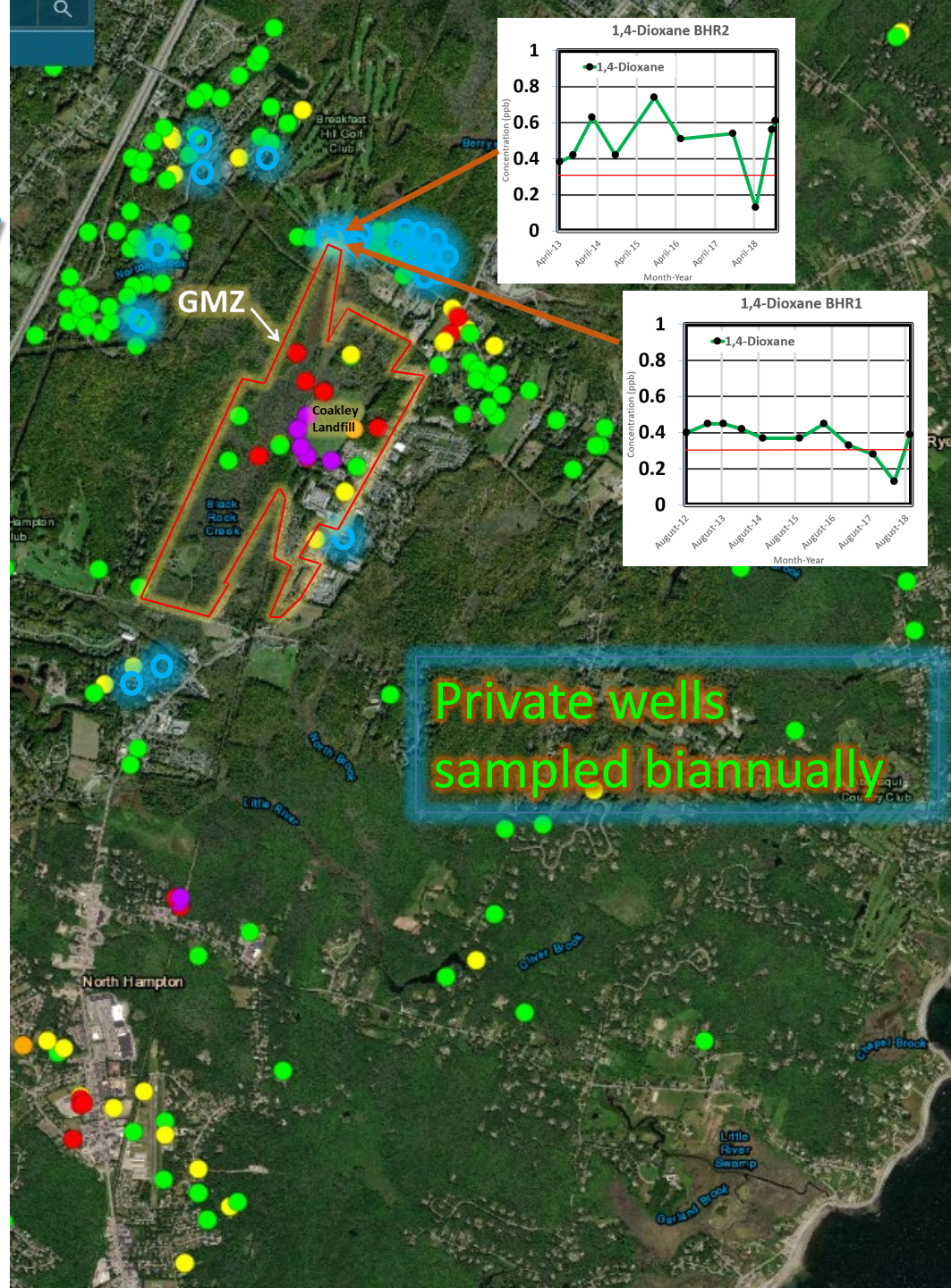
- Private wells with highest PFAS
- 4 events suggest no trend
- Source?





# 1,4-Dioxane Trend Summary

- Two private wells
- Revised standard shown 0.32 ppb
- 6+ years of data
- Steady state





# Summary of Private Well Sampling

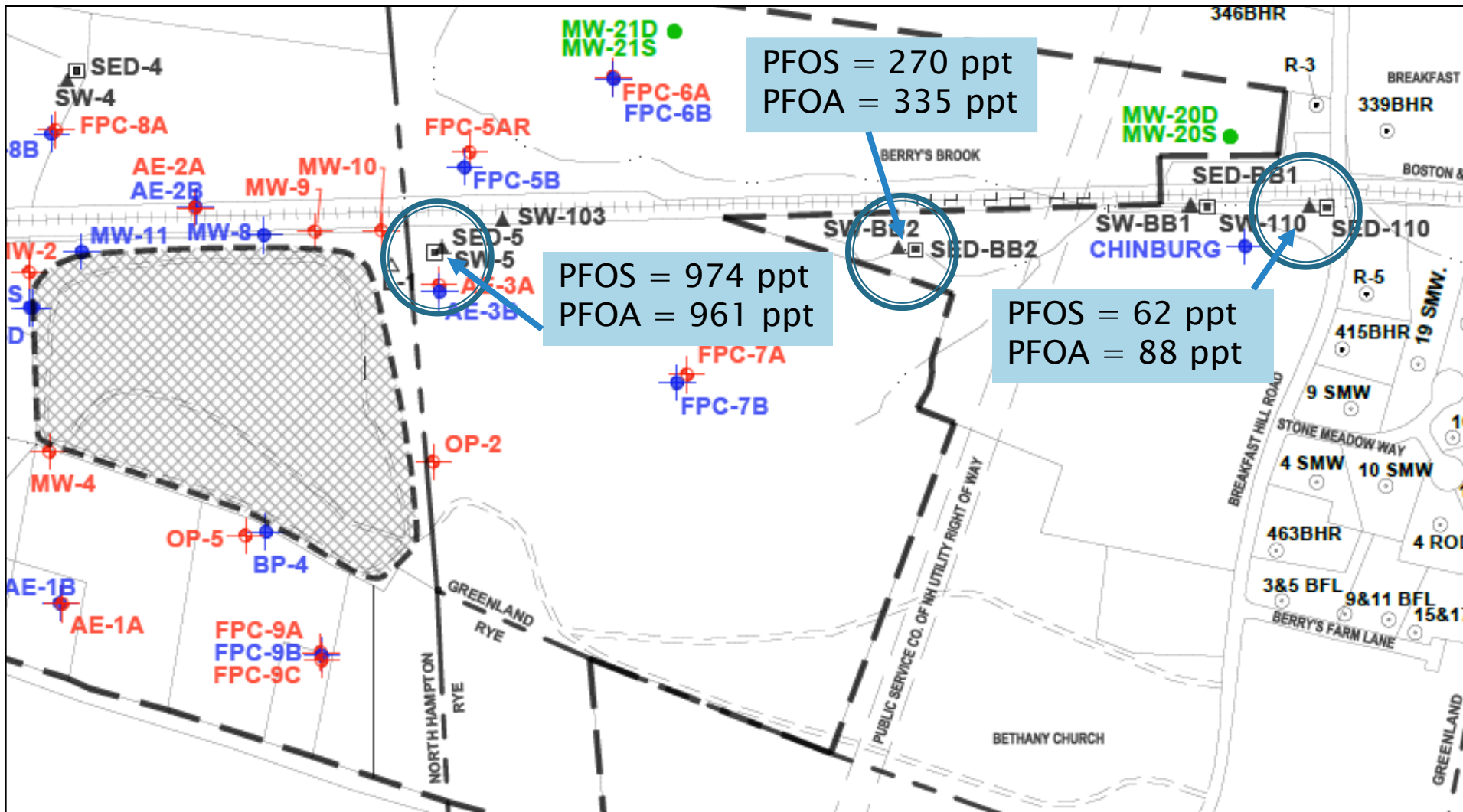
- Continued biannual sampling of site MWs and private wells.
- Data support limited off-site impacts.
- Data suggest steady state (no trend)
- Bedrock investigation will refine understanding of bedrock flow and existing/potential off-site impacts.

# 2018 Surface Water Results

- All locations downstream of landfill < 760 ppt in 2018
- One location in immediate vicinity of landfill > 760 ppt
  - SW-5 = 961 ppt PFOA
  - SW-5 = 974 ppt PFOS



# Surface Water Results



# Bedrock Investigation

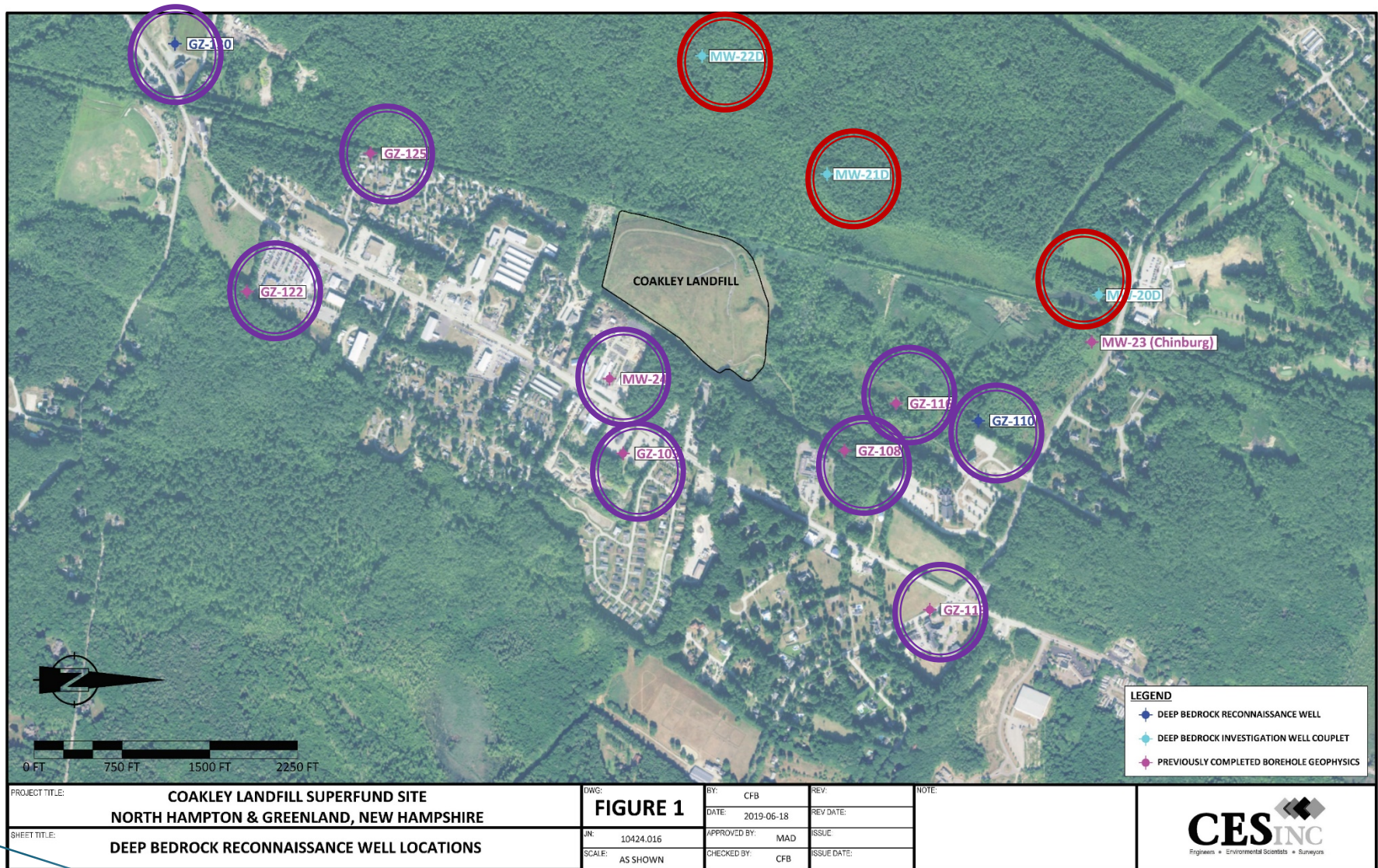
- Performed per May 31, 2018 Work Plan
- Two-year schedule
- Investigation initiated to:
  - Understand flow pathways in bedrock
  - Determine level of contamination in bedrock
  - Assess contaminant migration in bedrock groundwater to potential receptors

# Bedrock Investigation

- Surface geophysics
- 3 new bedrock wells installed
- Borehole geophysics
- Packer interval samples collected
- 9 historic bedrock wells redeveloped, surveyed, sampled



# Deep Bedrock Investigation Wells



# Sampling Results – 3 New Wells

## MW-20

- 3 fracture zones sampled
- 1,4-dioxane detected in all 3 fracture zones at **0.4 ppb, 0.4 ppb and 0.41 ppb**
- PFOA detected in one zone at **4.62 ppt**

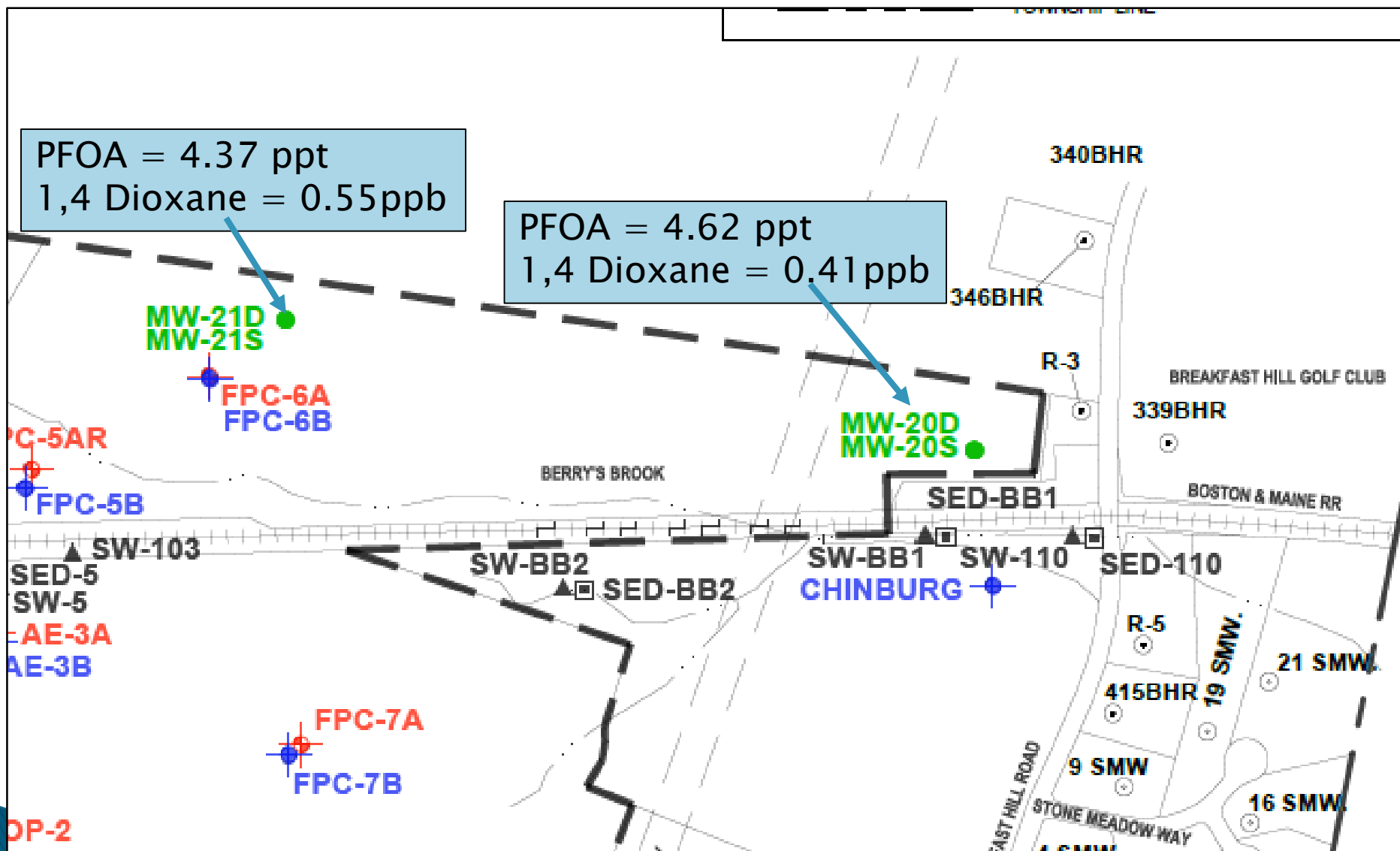
## MW-21

- 7 fracture zones sampled
- 1,4-dioxane detected in one zone at **0.55 ppb**
- PFOA detected in one zone at **4.37 ppt**

## MW-22

- 7 fracture zones sampled
- **ND for 1,4-dioxane and PFAS**

# Sampling Results – 3 New Wells





# Historic Wells

- 11 historic bedrock wells located
- 9 redeveloped and surveyed
- Sampling at 9 wells completed in June, including sampling from  $\approx$  50 fracture zones
- Results used to refine Conceptual Site Model

# Bedrock Next Steps

- Bedrock Investigation Tech Memo fall 2019
  - Update Conceptual Site Model
  - Address Data Gaps
    - Pumping Test
    - Installation of Additional Bedrock Wells
- USGS Model Development

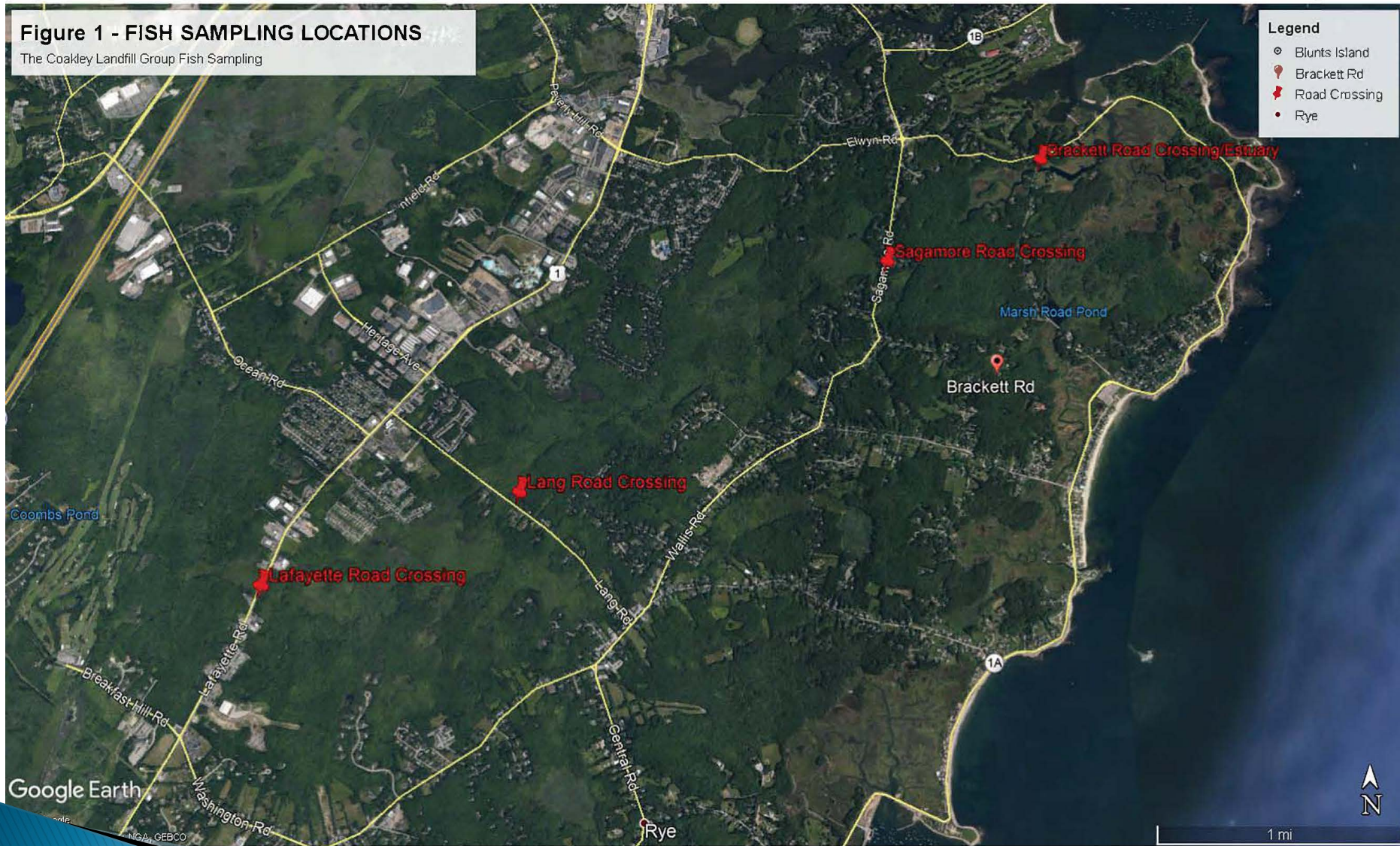


# Fish Tissue Sampling

- Berrys Brook fish samples collected in June 2018
  - Lafayette Road
  - Lang Road
  - Sagamore Road
  - Upstream of Brackett Road
  - Berrys Brook estuary
- Eel, Shiner, Pickeral and Brown Trout
- PFOA, PFOS and PFNA were detected
- PFOS = 19.2 ppb (ng/g) in Eel at Lafayette Road; SL = 5.21 ppb
- Brown Trout = 6.1 ppb PFOS
- EPA conducted risk assessment and determined no unacceptable risk from consumption of fish

## Figure 1 - FISH SAMPLING LOCATIONS

The Coakley Landfill Group Fish Sampling





# Stormwater Sampling

- Sample collected from groundwater seep appeared to be mixing with stormwater runoff
- April 2018, CLG initiated additional sampling to segregate stormwater runoff
- Based on results, EPA directed additional sampling of runoff and cap materials
- Samples collected in fall 2018 and spring 2019

# Coakley Landfill Contact Information

[www.epa.gov/superfund/coakley](http://www.epa.gov/superfund/coakley)

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